

This office action is a supplemental office action replacing the office action mailed on May 8, 2008 due to the wrong claims being examined.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 5 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 5 recites the limitation "the optical fiber" in 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5 and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goodman et al. 5,435,724 (Goodman) in view of Kowalyk et al. 5,456,603 (Kowalyk) further in view of Levy 5,292,253.
3. Re claim 1, Goodman teaches a method for treating hard tissues comprising the steps of generating a radiation from a diode laser (col. 5, ll. 21-24), which is a type of semiconductor laser source, focusing the radiation on the surface of the tissue by

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means of an adapted optical system and exceeding a fluence threshold of the laser radiation as a function of the tissue to be treated (col. 4, ll. 38-51, 65-68)

4. Goodman does not teach specifically teach applying a chromophorous agent with high absorption at the wavelength of the laser to a region of a tissue to be treated so as to have predominant absorption at a surface of the tissue, the laser having a power of more than 100 W and a fluence threshold between 20 and 100 J/cm² and emitting a laser radiation having a wavelength comprised between 600 and 1000 nm.

5. Kowalyk teaches applying a chromophorous agent with high absorption at the wavelength of the laser to a region of a tissue to be treated so as to have predominant absorption at a surface of the tissue (col. 4, ll. 64-67, col. 5, ll. 1-2). Kowalyk further teaches having an average power of 100 W (col. 6, l. 52) and having a wavelength between 600 and 1000 nm (col. 6, ll. 55-65).

6. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Goodman in view of Kowalyk in order to help protect the healthy portions of the tissue as taught by Kowalyk (col. 5, ll. 2-5) and since it has been held that “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” (*In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) MPEP 2144.05 II A).

7. Goodman in view of Kowalyk does not teach the fluence threshold between 20 and 100 J/cm².

8. Levy teaches the fluence threshold between 20 and 100 J/cm² (Col. 3, ll. 15-17).

9. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Goodman in view of Kowalyk further in view of Levy since it has been held that “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” (*In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) MPEP 2144.05 II A).

10. Re claim 2, Goodman teaches the method characterized in that the duration of the pulse is comprised between 10 and 50,000 μ s (col. 8, ll.28-29).

11. Re claim 3, Goodman teaches the method characterized in that the laser radiation is conveyed by means of a guided optical system (col. 4, ll. 65-67).

12. Re claim 4, Goodman teaches the method characterized in that the guided optical system is an optical fiber (col. 5, ll. 1-5).

13. Re claim 5, Goodman teaches the method characterized in that the focusing of the radiation in output from the optical fiber on the surface of the tissue is achieved by means of a system of lenses or mirrors (col. 4, ll. 65-68).

14. Re claim 7, Goodman teaches an apparatus for treating hard tissues comprising a source of laser light that contains at least one diode laser (col. 5, ll. 21-24), which is a type of semiconductor laser source, an optical system for focusing the laser light on the surface to be treated, characterized in that the fluence threshold of the generated laser radiation is variable (col. 4, ll. 38-51, 65-68).

15. Goodman does not teach the apparatus comprising a system for applying a chromophorous agent to the surface of a tissue, the laser having a power of more than

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100 W and a fluence threshold between 20 and 100 J/cm² and emitting a laser radiation having a wavelength comprised between 600 and 1000 nm.

16. Kowalyk teaches the apparatus comprising a system for applying a chromophorous agent to the surface of a tissue (col. 4, ll. 64-67, col. 5, ll. 1-2). Kowalyk further teaches having an average power of 100 W (col. 6, l. 52) and having a wavelength between 600 and 1000 nm (col. 6, ll. 55-65).

17. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Goodman in view of Kowalyk in order to help protect the healthy portions of the tissue as taught by Kowalyk (col. 5, ll. 2-5) and since it has been held that “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” (*In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) MPEP 2144.05 II A).

18. Goodman in view of Kowalyk does not teach the fluence threshold between 20 and 100 J/cm².

19. Levy teaches the fluence threshold between 20 and 100 J/cm² (Col. 3, ll. 15-17).

20. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Goodman in view of Kowalyk further in view of Levy since it has been held that “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” (*In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) MPEP 2144.05 II A).

21. Re claim 8, Goodman teaches the apparatus characterized in that the duration of the pulse is comprised between 10 and 50,000 μs (col. 8, ll.28-29).

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22. Re claim 9, Goodman teaches the apparatus characterized in that the laser radiation is conveyed by means of a guided optical system (col. 4, ll. 65-67).

23. Re claim 10, Goodman teaches the apparatus characterized in that the guided optical system is an optical fiber (col. 5, ll. 1-5).

24. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goodman et al. 5,435,724 (Goodman) in view of Kowalyk et al. 5,456,603 (Kowalyk) in view of Levy 5,292,253 as applied to claim 1 above, and further in view of Summers et al. 5,611,690 (Summers).

25. Re claim 7, Goodman in view of Kowalyk in view of Levy does not teach the method characterized in that the chromophorous agent is sprayed onto the tissue by means of an aerosol.

26. Summers teaches a method of spraying an agent onto the tissue by means of an aerosol (see abstract).

27. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Goodman in view of Kowalyk in view of Levy further in view of Summers in order to make applying the agent to the tissue more convenient for the user.

28. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goodman et al. 5,435,724 (Goodman) in view of Kowalyk et al. 5,456,603 (Kowalyk) in view of Levy 5,292,253 as applied to claim 10 above, and further in view of Myers 6,019,605.

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29. Re claim 11, Goodman in view of Kowalyk in view of Levy does not teach the apparatus characterized in that the optical fiber has a diameter from 5 to 2000 μm .

30. Myers teaches the apparatus characterized in that the optical fiber has a diameter from 300 to 600 μm (col. 2, ll. 33-36).

31. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Goodman in view of Kowalyk in view of Levy further in view of Myers since it has been held that "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." (*In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) MPEP 2144.05 II A).

Conclusion

32. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HEIDI M. BASHAW whose telephone number is (571)270-3081. The examiner can normally be reached on Mon-Thurs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cris Rodriguez can be reached on 571-272-4964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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